



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,692	07/26/2001	Edward T. Buford III	27.385	7736

7590 09/30/2003

Nigel L. Scott, Esquire
SCOTT & YALLERY-ARTHUR
7306 Georgia Avenue, N.W.
Washington, DC 20012

EXAMINER

CHIN, RANDALL E

ART UNIT PAPER NUMBER

1744

DATE MAILED: 09/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/912,692

Applicant(s)

BUFORD, EDWARD T.

Examiner

Randall Chin

Art Unit

1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 and 7 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Applicant has apparently added two new drawing figures labeled "4A" and "5A". For clarity, these two figures should be labeled --FIG. 4A-- and --FIG. 5A--, respectively. Also, the "Brief Description of the Drawings" section should describe these two new figures.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. Claims 1-5 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite in that it is unclear whether just a bristle is being claimed or whether a bristle and a brush device is being claimed in combination. See lines 7-8 which recite that the end of the bristle "is held in a fixed position on a brush device". The same objection holds for claim 5 which begins with the phrase "A bristle as claimed in claim 1 for use in toothbrushes", however, the body of the claim later uses the terms "said toothbrush" (lines 5, 8, 9).

Claim 2, line 2, "said spiral groove" should read --said at least one spiral groove" for consistency purposes. Claim 2, line 6, "run" should read --runs--. Also, on lines 5-7, the recitation "and wherein on an individual bristle said at least one spiral groove run in

Art Unit: 1744

clockwise or counter-clockwise direction as desired" is redundant of that already previously recited in that claim.

Similarly as in claim 2, claim 3 also appears to contain limitations redundant of that recited back in claim 1. For example, the bristle having at least one spiral groove along the substantially rigid shaft has already been set forth back in claim 1. Applicant is respectfully requested to review all claims for such redundancy and amend the claims where appropriate for clarity. Claim 5 is a dependent claim referring back to claim 1 and reciting many limitations already set forth in claim 1.

Claim 4, line 2, after "bristle" (first occurrence), insert —is—for clarity.

Claim 7, line 4, after "ten bristles", insert --,--.

Claim 8, line 1, "A brush device as claimed in claim 7" should read —The toothbrush as claimed in claim 7—for clarity. Similarly, in claims 3 and 5, line 1, "A bristle" should read —The bristle—for clarity.

Claim 8 contains redundant limitations on the "spiral groove" rendering the claim language awkward.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Art Unit: 1744

4. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Harbeke '774.

Claims 1 and 5 have been construed as merely claiming a bristle with a spiral groove and not the combination of a bristle and toothbrush (or brush device). This is because the preambles of claims 1 and 5 begin with the language "A bristle...". It will be noted that claims 6 and 7, however, do claim a toothbrush (or brush device).

As for claim 1, the patent to Harbeke '774 discloses in Fig. 3 a filament (or bristle) defined by base member 2 which would consist of a base end and a tip end connected to each other by means of a "substantially rigid shaft" (since it acts as a "cutter") and wherein there is at least one shallow spiral groove 4 along its longitudinal axis and wherein the shaft would be sufficiently flexible (since it is made from nylon material as recited in col. 3, lines 46-48) so that it can bend, twist and rotate on its own axis. As for the recitations in claims 1 and 5 reciting that the bristle is used in a toothbrush, that there are vertical and horizontal pressures applied to the tip of the bristle in a brushing motion, that the bristle becomes an abrasive device with respect to surfaces to be cleaned, that the bristle twists and rotates in the manner of an agitator of a washing machine thereby producing fluid cross currents in saliva and forces saliva into spaces in and around teeth and gums, and that the bristle increases contacts between shaft and teeth and gum surfaces to remove foreign particles lodged in between and around teeth and gums, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the

Art Unit: 1744

prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Also, all these limitations are merely functional in form and add no relevant structure to the "bristle" itself which is the only feature being claimed in claims 1 and 5 and not the bristle in combination with a toothbrush (or brush device).

As for claim 2, Fig. 4a refers to the depth T of the slot or groove 4 which depth T would be a diameter in the case of a conically formed slot or a circular segment (see col. 2, lines 48-60). Harbeke '774 teaches that a diameter of the slot 4 could be 1/7th the cross-sectional diameter of the filament or bristle which is about 14% and within the claimed range of "approximately 10 to 15 percent". Furthermore, the spiral groove runs in a clockwise or counter-clockwise direction on an individual bristle depending on orientation. The recitation in claim 2 referring to facilitating plaque removal and other waste materials is functional in form and adds no relevant structure to the "bristle" itself which is the only feature being claimed in claim 1.

As for claim 3, the groove is of uniform diameter throughout the shaft length and the ratio of the bristle diameter to groove diameter is 4.8 (with D being 2.4 mm and T being 0.5 mm) which meets the claimed "approximately 4:1" range (see col. 4, lines 1-9).

With respect to claim 4, Harbeke teaches using synthetic material such as nylon in extrusion or injection molding methods and this material is deemed to be plastic (see

Art Unit: 1744

col. 3, lines 44-48). Clearly, the bristle is flexible to a degree since it is made from a nylon material. As for the bristle being "capable of bending and rotating on an axis of thirty to ninety degrees when used in scrubbing or cleaning," these limitations are merely functional in form and add no relevant structure to the "bristle" itself which is the only feature being claimed in claim 1 and not the bristle in combination with a toothbrush (or brush device).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5 are rejected under 35 U.S.C. § 103 as being unpatentable over Terumichi Ono '569.

As well as the claims are understood, the claims are being rejected based solely on a bristle structure without the brush device or toothbrush since the preamble (first few lines) of claim 1 sets forth "A bristle...". However, it should be noted, that Ono '569 still discloses that the bristle can be used in "brushes" or as "brush bristles" (see col. 1, lines 55-56 and col.5, lines 19-24). Ono clearly teaches structure for a fiber or bristle with a shallow spiral groove.

The patent to Terumichi Ono '569 discloses a bristle as shown in Figs.1 and 2 which would have a base end and a tip end connected to each other by a substantially

rigid shaft portion in the same manner as Applicant's bristle arrangement (which can be used in brush devices, see col.1, lines 53-56)) wherein the bristle as shown in Fig.1 has a screw shape structure defining at least one "shallow" (a relative term) spiral groove along the bristle's longitudinal axis. The bristle base end when mounted onto a head portion of a brush device would be maintained in a fixed position on the base portion of a brush device. The bristle, clearly to a certain degree, would be a "substantially rigid shaft" as shown in Fig.1. If used in a brush, clearly the substantially rigid shaft would be sufficiently flexible (see col.5, lines 19-23) due to their flexibility and physical tenacity. Ono's bristle could perform in the same manner as the functional language of claim 1 recites. If slight vertical and horizontal pressures are applied to the bristle tip end, due to the screw configuration of the bristle, it would inherently twist, bend and rotate on its axis upon the application of these forces and would act abrasively upon a surface to be cleaned enhancing the bristle's function.

As for claims 2 and 3, Ono's shallow spiral groove clearly runs in a clockwise or counterclockwise direction depending on orientation (Figs.1 and 2). As for the specific percentages of the ratio of the cross-sectional diameter of the bristle relative to the cross-sectional diameter of the spiral groove, it should be noted that Ono is already concerned with such dimensions (see Fig.2 and col.1, lines 63-69 and col.2, lines 34-68) and one of ordinary skill in the art would find it obvious to vary such ratios depending on the desired brushing features needed. Ono already suggests a wide ratio range of these dimensions at col.1, lines 66-69. As for claim 3, the groove is of uniform diameter throughout the length of the shaft.

As for claim 4, synthetic or plastic fibers are taught by Ono (see col.1, lines 70-73 to col.2, lines 1-16). Clearly, depending on the force used in a brushing/cleaning operation, it is the position of the Examiner that the bristle is capable of bending and rotating 30-90 degrees when utilized. The recitation "capable of..." in claim 4 is not a positive recitation but merely functional in form and only requires the ability to so perform.

As for claim 5, if Ono's spiral bristles are used in an oral cavity, fluid cross-currents would be produced forcing saliva into and around spaces of the teeth and gums. Applicant's claims have not set forth any structure to define over what Ono teaches.

Allowable Subject Matter

7. Claims 6-7 are allowed.

Claim 8 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patent to Montsinger is pertinent to a fiber with a helical groove therein.

Art Unit: 1744

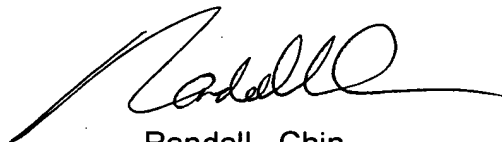
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randall Chin whose telephone number is (703) 308-1613. The examiner can normally be reached on Monday through Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Warden can be reached on (703) 308-2920. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



R. Chin



Randall Chin
Primary Examiner
Art Unit 1744